

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: )  
BRIAN JONES )  
SERIAL NO.: NOT YET ASSIGNED )  
FILED: CONTEMPORANEOUSLY ) GROUP ART UNIT NO.  
HEREWITH )  
TITLE: REINFORCED TENSION AND )  
COMPRESSION REACTING )  
STRUT AND METHOD OF )  
MAKING SAME )

EXAMINER:

INVENTION DISCLOSURE STATEMENT

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

The applicant in the above-identified U.S. Patent application which is being filed contemporaneously herewith, wishes to advise of the following prior art known to the applicant:

<u>PATENTEE</u>	<u>PATENT NO.</u>	<u>DATE</u>
1. Pratt	2002/0028332 A1	March 7, 2002
2. Smolen Jr.	4,801,019	January 31, 1989
3. Eldrid	3,279,278	October 18, 1966
4. Pietrzak	4,854,556	August 8, 1989
5. Bingham et al.	5,135,216	August 4, 1992
6. Woerndle	4,715,589	December 29, 1987
7. Härtel	4,942,075	July 17, 1990
8. Dolgin	5,203,435	April 20, 1993
9. Ciolczyk	5,364,061	November 15, 1994

10. Lawrence	3,204,911	September 7, 1965
11. Lund	5,772,188	June 30, 1998
12. Hawkins et al.	6,068,250	May 30, 2000
13. Loziuk et al.	5,609,328	March 11, 1997
14. Amburgey et al.	DES.361,261	August 15, 1995

1. Pratt U.S. Publication No. 2002/0028332 A1

A tubular structure which is formed from a wavy composite material, such as a sinuous composite structure. With this structure, the applicant proposes to avoid axial torsion or shear properties equivalent to unidirectional material without limitations to fiber discontinuity.

2. Smolen Jr. Patent No. 4,801019

A spring-like device having a central shock absorber. The spring elements have a contoured profile so as to deflect outwardly from their longitudinal access when loaded under compression. They will also deflect radially as well as circumferentially in other constructions.

3. Eldrid Patent No. 3,279,278

A tiebar construction which is capable of reacting to tension and torsion in the end fittings thereof in a manner to theoretically minimize localized stress concentration. The patentee alleges that the tiebar is capable of transmitting high tensile and torsional loadings and proposes the bonding of an

elastomeric resilient ring to a portion of the structure. End fittings 12 were modified to bond a semi-circular ring 14 and a ring 15 to tapered surfaces 18. The patent does provide a continuous band of filament reinforcing material.

4. Pietrzak Patent No. 4,854,556

A damping device having an elastic structure enclosed within a mass of elastomeric material to provide a high internal damping. The structure is provided with a bore so that the elastic deflections cause the elastomeric material to work in compression and in shear.

5. Bingham et al. Patent No. 5,135,216

A structure which is somewhat similar to that presented in the Eldrid Patent. The structure in this case is a resistance assembly to provide resistance in exercising movements. A pair of spools containing ends with a resilient loop passes around a portion of each of the pools. The resistance of the assembly is varied by exchanging resilient loops for those having different resistive properties.

6. Woerndle Patent No. 4,715,589

A continuous belt of reinforcing material extending about a pair of spaced apart shafts or bolts 1 and 1<sub>1</sub>. The device operates as a connecting device which is subject to tension loads on the hoop in the longitudinal direction. The patentee proposes to avoid crosswise contractions of synthetic material matrix caused by

compressive loading which might otherwise force the matrix material to squeeze out of the fiber.

7. Härtel et al. Patent No. 4,942,075

An angular body of fiber composite material which serves as a vibration insulator and which is wound in a circumferential direction and a loading direction. Thus, layers of resin impregnated fibers extend in a circumferential direction and transverse to a load direction. Another layer of fibers extends at an angle relative to the concentric layers.

8. Dolgin Patent No. 5,203,435

A strut comprising a visco-elastic material sandwiched between multiple layers which dampen localized force. The layers are formed of composite materials of opposing orientations.

9. Ciolczyk et al. Patent No. 5,364,061

A link including a pair of rigid tubes extending between a vehicle chassis and the engine of the vehicle. An outer strength member 7 is comprised of composite material and a pair of low stiffness resilient pads 8 and 9 are also provided. Fibers of the composite material are crossed.

10. Lawrence et al. Patent No. 3,204,911

A vibration damping and load supporting apparatus which theoretically avoids the damping of vibration without the use of supplementary elastic material. The vibration damping and load supporting device is comprised of a pair of frames with loops of stranded wire cable interconnecting points of attachment of each of

the frames. However, the wires are not necessarily formed of a composite material. Snap fitting connections are provided between a spring and a grid used in a boxspring for a bed.

11. Lund Patent No. 5,772,188

A shock absorber which also uses an elastomeric strip. Attachment plates are secured to suspension components such that collapsing of the suspension components results in an extension of the elastomeric sections.

12. Hawkins et al. Patent No. 6,068,250

A multi-wave cylindrically shaped composite compression spring. The spring is comprised of uni-directional fibers, creating troughs and waves. Turns of the spring contact one another along a radial line extending from the longitudinal axis thereof. The construction provides an increased linearity response over wider spring deflection.

13. Loziuk et al. Patent No. 5,609,328

A pipe restraint which permits thermal expansion of piping installations. The restraint includes displacement members connected by a restraining mechanism for restraining displacement of the two member relative to one another. The displacement members oppose portions of a helical coil. The coil flexes as displacement loads are applied. If the displacement members displace beyond a certain limit, the coils will collapse.

14. Amburgey et al. Patent No. DES.361,261

The design of a suspension band. Essentially no information is provided as to the construction of the band and/or its real function.

None of the references taken alone or in combination showed the unique concept of adhesively securing the end fittings to opposite ends of an elongate body with a strap extending around the surfaces of the body and the fittings so as to effectively make the fittings integral with the body. In this way, the strut reacts very effectively to compressive and tension loads.

Dated: 8/21, 2003

Respectfully submitted,

  
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, D.C. 20231 on Aug. 21, 2003.

  
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C:\Documents and Settings\All Users\Documents\Data\Jones, Brian\Reinforced Tension and Compression Reacting Strut\Invention Disclosure Statement

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Substitute for form 1449A/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Application Number	NEW
(use as many sheets as necessary)		Filing Date	NEW
		First Named Inventor	BRIAN JONES
		Art Unit	
		Examiner Name	
Sheet	/	of	/
		Attorney Docket Number	

## **U.S. PATENT DOCUMENTS**

## **FOREIGN PATENT DOCUMENTS**

<b>Examiner Signature</b>		<b>Date Considered</b>	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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